

REMARKS

By this amendment, applicants have amended the claims to more clearly define the invention. In particular, claims 1 and 6 have been amended to recite that the light-emitting layer comprises a singlet-utilizing material, at least two kinds of spin conversion materials, and a light-emitting molecule. See, page 5, lines 20-24; page 10, lines 5-27; and page 11, line 17 to page 12, line 2 of Applicants' specification. Applicants have also canceled claims 11-18 without prejudice or disclaimer and added new dependent claims 23-26 to further define their invention. See, page 10, lines 5-27 of Applicants' specification. Claims 3 and 8 have been amended to depend from claims 23 and 24, respectfully. Claims 5 and 10 have been amended eliminate the indefiniteness problem noted by the Examiner and claims 21 and 22 amended to be consistent with the amendments to claims 1 and 6.

Applicants traverse the finality of the outstanding Office Action. As admitted by the Examiner in the numbered section 6 of the Office Action, the Office Action contains new grounds of rejection. At least some of these grounds were not necessitated by amendment. For example, the objection to claim 1 in numbered section 1 of the Office Action and the rejection of claims 1, 2-6, 8-18, 21 and 22 in numbered section 2 of the Office Action were not necessitated by amendment since the phrases now deemed by the Examiner to lack antecedent basis and to render the claims indefinite were present in the claims prior to the amendment of January 7, 2005. Accordingly, the Amendment of January 7, 2005 did not necessitate these grounds of rejections. Therefore, the finality of the outstanding Office Action is premature and should be withdrawn. Upon withdrawal of the finality of the outstanding Office Action, this Amendment must be entered.

In view of the foregoing amendments to the claims, it is submitted all of the claims in the application comply with the requirements of 35 U.S.C. 112, second paragraph. Therefore, reconsideration and withdrawal of the objection to claim 1 in numbered section 1 of the Office Action and the rejection of claims 1, 2-6, 8-18, 21 and 22 in numbered section 2 of the Office Action are requested.

Claims 1, 3-5, 13, 15, 17 and 21 stand rejected under 35 U.S.C. 102(a) as allegedly being anticipated by the Baldo et al. article. Claims 6, 8-12, 14, 16, 18 and 22 stand rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Baldo et al. Applicants traverse these rejections and request reconsideration thereof.

The presently claimed invention relates to an electroluminescent film device having a light-emitting layer where an excited state generated by electron-hole recombination is utilized for photon generation. According to the present invention, the light-emitting layer of the device comprises a singlet utilizing material, at least two kinds of spin conversion materials, and a light emitting molecule. Such is neither disclosed nor suggested by the Baldo et al. article. The Baldo et al. article discloses studies of PtOEP and Ir(ppy)₃ doped into different host materials. The Examiner refers to Figure 11 of this article which shows the external quantum efficiencies of 1% of PtOEP doped into Ir(ppy)₃ in comparison with 1% PtOEP doped into CBP. However, this article does not disclose a light-emitting layer comprising a singlet-utilizing material, at least two kinds of spin conversion materials, and a light-emitting molecule, as presently claimed. For example, this article discloses only one type of spin conversion material being used.

It seems that an excited state which is caused by recombination of electron and hole in a light-emitting layer is not uniform but has a certain width in its energy

value because of distribution of kinetic energy possessed by electrically charged matter, physical properties of recombined local sites, etc. As spin conversion molecules which carry out conversion in a triplet excited state, the present invention uses a plurality of molecules different in energy and physical properties to attain a high conversion efficiency as compared with use of one kind of molecule.

That is, it is expected that recombined excited particles have various energy values. In order to attain conversion of such excited particles having various energy values in the triplet excited state, residual quantities of various spin conversion particles have to be added. Otherwise, one cannot attain a high conversion efficiency depending upon such various energy values.

By using at least two kinds of spin conversion materials, the present invention can attain a high conversion efficiency. Such is neither disclosed nor suggested by Baldo et al.

Accordingly, the presently claimed invention is neither disclosed nor suggested by Baldo et al.

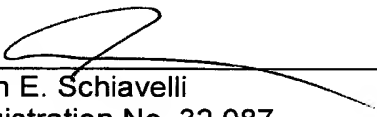
In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 500.40580X00),
and please credit any excess fees to such deposit account.

Respectfully submitted,

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